

TITLE

METHOD AND APPARATUS FOR CONTOUR TRACKING OF AN IMAGE
THROUGH A CLASS OF NON LINEAR FILTERS

ABSTRACT

5 A method for automatically detecting and tracking the
contour of an image that uses a class of filters, obtained
from the first order absolute central moment. The method
provides the steps of filtering a starting image through the
absolute central moment $e(n,m)$ of the intensity of a pixel of
10 said image, being n and m the coordinates of each pixel,
where the absolute central moment is obtained with the
following steps: determining for each n,m the local mean
calculated in a neighborhood about a pixel of coordinates
 n,m of the starting image, thus obtaining a first filtered
15 image; determining for each n,m the sum of the absolute
differences between the intensity of a pixel of coordinates
 n,m of the first filtered image and the intensity of all the
pixels contained in a neighborhood about a pixel of
coordinates n,m of either said starting image or a second
20 filtered image obtained from said starting image. The images
to treat can be of various type and belonging to many
different fields, among which robotics, control of
industrial processes, medicine, multimedia applications,
safety systems, and can be color or grey levels images. The
25 bidimensional images can give place to volumetric images or
panoramic images if acquired as spatial sequences of slices.